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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/077,191	02/15/2002	Jordan T. Bourilkov	08935-258001 / M-4980	9513
26161	7590	12/17/2003	EXAMINER	
FISH & RICHARDSON PC 225 FRANKLIN ST BOSTON, MA 02110			LUK, LAWRENCE W	
			ART UNIT	PAPER NUMBER

2838

DATE MAILED: 12/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/077,191

Applicant(s)

BOURILKOV ET AL.

Examiner

Lawrence W Luk

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AW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-11, 14-17 and 19-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10, 11, 14-17 and 19-26 is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuura (6,094,034) in combination with Park (JP 11298342 A).

As to claims 1 and 8, Matsuura disclose in figure 1 & 2, column 2, lines 13-65 and column 3, line 59 to column 4, line 5, a switching type DC/DC boost type converter that receives energy from a primary battery cell and is arranged to deliver the energy to a rechargeable cell, the DC/DC converter having a feedback input set to provide a fixed output voltage that is less than the full charge voltage of the rechargeable cell, but fails to teach a pair of external resistors coupled to the feedback input of the converter to adjust the fixed output voltage to be less than the full charge voltage of the rechargeable cell.

Park disclose in Abstract to teach a pair of external resistors coupled to the feedback input of the converter to adjust the fixed output voltage to be less than the full charge voltage of the rechargeable cell.

It would have been obvious to person having ordinary skill in the art at the time of the invention made to modify the device of Matsuura to include a pair of external resistors coupled

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to the feedback input of the converter to adjust the fixed output voltage as taught by Paek for the purpose of controls in the converter output voltage.

As to claim 2, Matsuura disclose in column 4, lines 6-24, a circuit including a primary battery current control that senses primary battery current, and controls in part operation of the converter to provide constant current discharge.

As to claim 3, Matsuura disclose in column 6, lines 38-50, a primary current sense amplifier/ comparator and a power shutdown control circuit to shut down the primary current sense amplifier/comparator.

As to claim 7, Matsuura disclose in column 7, line 41 to column 8, line 7, the primary battery control comprises: an operational amplifier with a primary battery current sensing resistor to provide primary battery current control, having the output of the amplifier coupled in a closed feedback loop of the converter.

As to claim 9, Matsuura disclose in column 7, lines 19-22, the circuit delivers an output voltage that corresponds to about 90% charge of the rechargeable cell.

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuura (6,094,034) in combination with Park (JP 11298342 A) as discussed above, and further in combination with King (6,331,365).

As to claim 5, Matsuura and Park discloses the elements as claimed, except for a primary battery is an alkaline cell, Zn-air cell, fuel cell, solar cell, or another current limited power source.

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King disclose in column 1, lines 34-35, a primary battery is an alkaline cell, Zn-air cell, fuel cell, solar cell, or another current limited power source.

It would have been obvious to person having ordinary skill in the art at the time of the invention made to modify the device of Matsuura and Park to include a primary battery is a Zn-air cell as taught by King for the purpose of improving the charging circuit.

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuura (6,094,034) in combination with Park (JP 11298342 A) as discussed above, and further in combination with Amatucci (6,517,972).

As to claim 6, Matsuura and Park discloses the elements as claimed, except the rechargeable battery is a Li-Ion or Li-polymer rechargeable cell.

Amatucci disclose in column 2, lines 43-59, the rechargeable battery is a Li-Ion or Li-polymer rechargeable cell.

It would have been obvious to person having ordinary skill in the art at the time of the invention made to modify the device of Matsuura and Park to include the rechargeable battery is a Li-Ion or Li-polymer rechargeable cell as taught by Amatucci for the purpose of improving the charging circuit.

Allowable Subject Matter

5. Claims 10, 11, 14-17 and 19-26 are allowed.

Claims 10, 15 and 20 are allowable. The reason for allowance is that the prior art of record Matsuura and King teaches a switching type DC/DC boost type converter that receives energy from a primary cell, and arranged to deliver the energy to rechargeable cell, but fails to

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disclose a rechargeable cell being an Li-Ion or Li-Polymer rechargeable cell. It is these features found in the claim, as they are claimed in the combination, which has not been found, taught or suggested by the prior art to record, which makes this claim allowable over the prior art.

Claims 11 and 14 are allowed due to their dependency on claim 10.

Claims 16, 17 and 19 are allowed due to their dependency on claim 15.

Claims 21-26 are allowed due to their dependency on claim 20.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence Luk whose telephone number is (703)305-0617. The examiner can normally be reached on 7 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (703) 308-1680. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-7724 for regular communications and (703)305-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-1782.

LWL

December 4, 2003

Lawrence Luk
examiner
12/4/03